



Response Under 35 U.S.C. F.R. § 1.111
U.S. Appln No. 10/827,248

Q81215

REMARKS

Status of the claims

Claims 1-21 have been examined. Claims 1-21 are pending in the application.

Formal matters

Applicant notes that the Examiner has objected to the specification, but has not provided any comments about what, specifically, is objected to. Applicant cannot respond to such a general objection. Applicant therefore respectfully requests that the Examiner either specifically point out what the Examiner finds objectionable or remove the objection.

Claim rejections -- 35 U.S.C. § 103

Claims 1, 10, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over WO02/079799 using U.S. Patent Application Publication No. 2004/0119966 for translation in view of U.S. Patent No. 5,748,295 to Farmer. Applicant respectfully traverses this rejection for the following reasons.

First, the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the Examiner must show 1) some suggestion or motivation to modify the reference or to combine reference teachings, 2) a reasonable expectation of success, and 3) that the prior art reference or references when combined teach or suggest all the claim limitations. MPEP § 2142. In the instant case, the Examiner has provided no motivation or suggestion to combine the Iritani and Farmer teachings.

Second, even if the teachings of Iritani and Farmer may be properly combined (which Applicant submits is not the case), the combination still does not teach or suggest all of the features of the present invention. For example, claim 1 recites the feature of using the first amplitude signal to derive a first relative speed between the first position of the distance measurement system and the measurement object. The Examiner admits that Iritani fails to teach or otherwise disclose this feature, but cites Farmer as allegedly curing the deficiency. Specifically, the Examiner maintains that Farmer shows the conversion of distance to velocity at col. 3, line 35 to col. 4, line 34, and asserts that it would have been obvious to use the calculation of Farmer to modify Iritani because conversion of distance to velocity is a common conversion. However, Applicant respectfully disagrees with the Examiner's position. First, the fact that the references can be combined, or that the claimed invention is within the capabilities of one of ordinary skill is not sufficient to establish *prima facie* obviousness. See MPEP § 2143.01, Secs. III & IV. Thus, just because a conversion of distance to velocity is allegedly common does not render claim 1 obvious over Iritani and Farmer. Second, at cols. 3 & 4, Farmer only teaches determining the range, direction and velocity of an object with respect to the system. See, e.g., col. 3, lines 60-62; col. 4, lines 11-13. Thus, the Iritani and Farmer combination does not teach determining a first *relative* speed between a first position of the distance measurement system and the measurement object, as set forth by claim 1. Applicant notes that the "system" in both Farmer and Iritani is stationary. In fact, it is a goal of Farmer to compensate for mechanical vibrations or oscillations of the object. If the system were also moving relative to the object, additional vibrations would be introduced to the system, and thus frustrate the purposes of

Farmer. Third, Farmer only discusses using mode hopping to make the determination. See *id.* Thus, Farmer also does not teach or suggest using a *first amplitude signal* to derive a first relative speed, as set forth by claim 1. For these reasons, claim 1 is patentable.

Independent claims 10 and 20 recite features similar to those of claim 1 discussed above. Therefore, claims 10 and 20 are patentable for the same reasons. Claim 21 is patentable based on its dependency.

With respect to claim 21, the Examiner states at page 3, lines 6-8 of the Detailed Action section, faxed to Applicant's representative on October 26, 2006, that "it would have been obvious to have the steps because Iritani shows the steps without the relative speed determination." However, Applicant respectfully disagrees with the Examiner's position. Claim 21 sets forth that the steps 1-4 are performed sequentially. At paragraphs 9 and 10 of Iritani, Iritani merely describes the elements which comprise the distance-measuring device. Iritani does not discuss the specific order of steps, as set forth by claim 21. Therefore, claim 21 is patentable for this additional reason.

Claims 2-9 and 11-19 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Iritani and Farmer, in view of U.S. Patent Application Publication No. 2002/0024652 to Ooga. Applicant respectfully traverses this rejection for the following reasons.

First, Applicant respectfully submits that one having ordinary skill would not have been motivated to combine the teachings of Iritani with Ooga. Iritani concerns a distance-measuring device for measuring the distance to an object. To this end, Iritani uses an interferometric

ranging technique. By contrast, Ooga is concerned with detecting a wake turbulence which appears behind the main wings of an aircraft during takeoff. Applicant respectfully submits that one skilled in the art faced with the distance ranging problems of Iritani would not look to the aircraft wake turbulence detecting system of Ooga for a solution. Since, as the Examiner admits, the Iritani and Farmer combination, in isolation, does not teach or suggest all of the features of claims 2-9 and 11-19, claims 2-9 and 11-19 are patentable.

Second, even if the teachings of the Iritani, Farmer, and Ooga references may be combined, they still do not teach all of the features of the claims. For example, claim 2 sets forth detecting an amplitude of a first standing wave at a first position of the distance measurement system, and detecting an amplitude of a second standing wave at a second position of the distance measurement system. Applicant respectfully submits that although Ooga may teach two beams to determine the distance to solids, Ooga does not teach or suggest two positions of the distance measurement system, i.e., a first position and a second position, as set forth by claim 2. Neither does Iritani or Farmer teach this feature. Therefore, claim 2 is patentable over the Iritani, Farmer, and Ooga combination for this reason. Claims 3-4 are patentable based on their respective dependencies.

Claims 11-13 recite similar features to claims 2-4, and are therefore patentable for the same reasons.

Claim 5 recites the feature of changing the frequency of the first traveling wave stepwise. The Examiner maintains that this feature would have been obvious because this is a common

way to change the frequency of a signal. However, as noted above by Applicant, the mere fact the claimed invention is within the capabilities of one of ordinary skill is not sufficient to establish *prima facie* obviousness. See MPEP § 2143.01, Secs. IV. The Examiner provides no support in the cited art for this statement. Applicant notes that Iritani discloses a frequency controlling means which outputs out a signal whose frequency is changing. See paragraph 9, lines 4-5. Farmer uses mode hopping, wherein only certain frequencies of radiation will set up standing waves within the optical cavity of the laser. See col. 9, lines 41-57. Ooga is concerned with scanning laser beams and not changing frequencies. Thus, the cited references contain teachings that would teach away from using a stepwise change of frequency, as set forth by claim 5. Thus, claim 5 is patentable over the Iritani, Farmer, and Ooga combination for this additional reason. Claims 6-9 are patentable based on their respective dependencies. Claims 14-18 recite similar features as claims 5-9, and are therefore patentable for the same reasons.

Third, claims 2-9 and 11-19 each depend from either independent claim 1 or 10, both of which have been shown above to be patentable over Iritani and Farmer. Ooga contains no teachings relevant to the above-discussed points. Therefore, claims 2-9 and 11-19 are patentable over Iritani, Farmer, and Ooga, alone or in combination, based on their respective dependencies.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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